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THE RELATIONSHIP OF SELF-ESTEEM AND BIRTH ORDER: A STUDY OF GRADE FIVE CHILDREN

by

© GERALD A. SCHULTZ

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

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Date October 26, 1982

ABSTRACT

This research was carried out for the purpose of investigating the relationship between birth order and self-esteem in children. Birth order position and self-esteem scores were obtained on a representative sample of 542 grade five children attending Edmonton Public Schools.

Four birth order categories were used: only children, first born children, middle born children, and youngest children. True and composite classification of birth order categories were used in this research. True birth order position was determined relative to the family as a whole. Composite birth order position was determined in families where siblings were divided into subfamilies separated by a five year age gap.

Self-esteem was measured by the Culture-Free Self-Esteem Inventory for Children which provided a total self-esteem score plus four subscale self-esteem scores. The subscales measured a general self-esteem in addition to self-esteem related to peers, parents and school.

Data was analyzed by a two-way analysis of variance technique using mean self-esteem scores by sex and birth order category. It was hypothesized that there was no significant difference between mean scores on each self-esteem measure for each of the birth order categories.

Findings indicated that sex of child was not related to self-esteem nor was there a significant composite birth order effect. A significant true birth order effect was found on Social Self-Esteem where middle born children scored significantly higher than only children. No true birth order group scored significantly different than the mean for the total sample on each measure of self-esteem. Some noticeable and consistent birth order trends were observed.

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LIST OF ABBREVIATIONS

Analysis of Variance	Anova
Birth order	BO
Culture-Free Self-Esteem Inventory	CFSEI
Edmonton Public Schools	EPS
Self-esteem	SE

Family Constellation Abbreviations

Only child	O
First born child	FB
Middle born child	MB
Middle-of-three children	MT
Youngest child	Y

THE RELATIONSHIP OF SELF-ESTEEM AND BIRTH ORDER: A STUDY OF GRADE FIVE CHILDREN

CHAPTER I

INTRODUCTION TO THE PROBLEM

Public school educators in Edmonton are cognizant of the importance of the affective component in the education of the child, particularly during the elementary school years. Affective education is currently being promoted on two fronts with the first through curriculum change and the second through objectives set by individual schools. Literature indicates that self-esteem is more susceptible to change, through intervention in the child's younger years, and that self-esteem becomes more stable as the child grows older and reaches adolescence (Rubin, 1978; Swindlehurst, 1978, pp. 41-44). The basic educational thrust is to enhance pupil self-esteem and thereby facilitate the student's learning process. It is generally acknowledged that children learn better if they feel good about themselves and are accepted and respected by others (Hale, 1978; Henderson, 1974, pp. 57-60; Battle, 1981a).

Self-esteem appears to be an entity which may be modified by intervention programs and which seems to affect academic achievement. Therefore, it is important to examine factors which may affect the development of self-esteem. This chapter presents the scholastic implications of self esteem and the importance of family factors in the development of self esteem. In addition, birth order is discussed relative to academic achievement and self-esteem. The purpose of the study is also introduced.

Scholastic Implications of Self-Esteem

Evidence is abundant which indicates that intrapersonal factors, other than intelligence, play an important role in determining whether a child will achieve to his scholastic potential or not. One such factor is the construct of self-esteem or self-concept. The consensus of the research indicates a significant relationship between self-concept and academic achievement (Oswald, 1976, p. 2; Purkey, 1970, p. 15; Swindlehurst, 1978, pp. 31-34).

Although the correlation between self concept measures and school achievement is positive, it must not be assumed that one causes the other (Schreier & Kraut, 1979, pp. 131-149). There may be a two-way relationship in which one may influence the other or there may be some other developmental, familial, psychological, sociological, physical, emotional, or personality factors contributing, at least in part, toward the building of self-esteem and the ability to achieve to one's potential in school.

Family Factors in the Development of Self-Esteems

The family provides the primary social setting in which the young child learns what he is like and how he fits into the family constellation. Adler believed that family atmosphere, behaviors, and personalities, along with family codes, were important factors in the development of a child's personality (Manaster & Corsini, 1982, pp. 80-81). Adler also believed that size of family, sex of siblings, and order of birth, influenced how one saw life and how personality developed.

C. Rogers and A. Maslow postulate that, even in their early years, children select their perceptions of themselves in relation to others,

and the outside world, which leads to their concept of themselves or their personality. The child's perception and personal interpretation of these familial experiences have a strong bearing on the development of a child's life-style or personality (Dinkmeyer, 1965, pp. 313-314). The child's early impressions of himself are obtained in a family context.

Birth Order and Self-Esteem

The idea that birth order may produce developmental differences was first referred to by Galton in 1874. Galton considered birth order an important factor in the nurturance and development of eminent English scientists (Miley, 1969, p. 64). Since that time much has been written about birth order with at least 375 articles appearing in the 1970's alone (Forer, 1977, p. 122). Birth order studies have appeared relating a number of variables such as vocational choice, personality, psychiatric problems, and academic achievement, to name a few.

A survey of pertinent literature shows inconsistent findings when relating birth order to academic achievement. These inconsistencies appear to be due to differences in research designs and the measurement of different constructs. Inconsistencies in experimental design were also a problem when comparing studies on self-esteem and academic achievement.

Past studies show that both birth order and self-esteem show some relationship to academic achievement. As a result the question remains as to whether there is a relationship between birth order and self-esteem. Related literature shows that birth order has been studied in relation to a number of personality variables but little work has been done correlating birth order to self-esteem as it relates to children.

Available studies use samples drawn from college populations with results showing some differences among ordinal position in the family. Differences were found in conformity, wish to go to college, and identification with parents, as first borns scored higher in these areas than later borns (Purpura, 1971). First borns also were shown to have a greater need for self evaluation and later borns to have a greater need for anxiety reduction (Ring et al., 1976; Whole No. 603). Later born females obtained lower self-esteem scores than by chance (Eisenman, 1970). In contrast, a study by Nystul (1974) showed no difference in self-concept between first and later born university students.

In summary, it appears that family constellation is an important factor in the development of both personality and a personal frame of reference, or self-concept. There appears to be a paucity of literature specifically relating birth order to self-esteem in children.

Purpose of the Study

The purpose of this study was to see if there was a relationship between birth order and self-esteem in children. Adler proposed that there were certain birth order tendencies that may be attributed to children in various birth order positions.

In essence the present study will investigate how birth order differences affect self-esteem in children. This research may also help fill the gap in the literature regarding the relationship between birth order and self-esteem in children.

The discovery of a strong relationship between a specific birth order characteristic and low self-esteem may prove useful in identifying children prone to having academic difficulties in school. These children

may then be identified and benefit from intervention programs to improve both self-esteem and academic success.

CHAPTER II

THEORY AND RESEARCH

The focus of chapter two is on the constructs of self-esteem and birth order position within the family constellation. Some historical background, theory, and research will be discussed. Definitions of self-esteem and birth order will also be presented.

Self-Esteem

Psychologists dealing with phenomenological constructs have had difficulty in defining terms and achieving appropriate observable indices for measuring these constructs (Wylie, 1961, p. 6). Self is one such construct and is referred to in many ways such as self-concept, self-image, self-esteem, phenominal self, self-regard, self-acceptance and other similar terms. It would be more helpful if these labels were more clearly differentiated in terms of meaning and construct. Self terms are "so intertwined and overlapping in the literature that the constructs must be discussed as a group" (Wylie, 1961, p. 40).

A construct definition of self-esteem used in this study was that stated by Battle, the author of the Culture-Free Self-Esteem Inventory (CFSEI). According to Battle self-esteem refers to a perception the individual has of his own worth. Self-esteem develops gradually in a social sphere and becomes fairly stable once established.

The CFSEI was the instrument used to measure self-esteem in this research. Using this instrument it was possible to tap self-esteem in four specific areas as well as to arrive at a total self-esteem score. The areas of self-esteem being tapped were related to parents, school, peers, and general self-esteem. Bandura suggested that measures in

specific areas are more meaningful than is a composite score (Bandura, 1977, pp. 138-139).

Historically the development of self-esteem as a personality factor was first referred to by William James, in 1890. James noted three possible influences on self-esteem: These were human aspirations and values, communal standards of success and status; and extensions of self such as material and social aspects. In 1934 George Mead indicated that self-esteem was largely derived from the reflected appraisal of others. Harry Stack Sullivan also agreed that self-esteem was developed through others "mirroring" our actions. He also believed that individuals guarded against loss of self-esteem, for such a loss produced anxiety. Alfred Adler referred to feelings of inadequacy or inferiority that served as motivating forces to achieve greater competence. In 1951 Carl Rogers proposed that individuals developed a self-image which served to maintain their adjustment to the external world (Coopersmith, 1967, pp. 29-35).

Theorists provide a variety of interpretation of "self" and its importance to personality. The self may be viewed as active or passive. Adler talked of an active and creative self which interpreted and made meaningful all of the experiences pursued by or created by an individual in the development of a unique life style (Hall & Lindzey, 1970, p. 120). Freud viewed the ego, or self, as merely the ground on which external and internal forces interacted (Ansbacher, H. & R., 1964, p. 286). The ego was viewed as a group of subconscious psychological processes that served the ends of inborn instincts (Hall & Lindzey, 1970, p. 120). Jung considered the self to be the center of personality, having the function of providing unity and stability to the personality.

The focal point of self was between the conscious and unconscious (Hall & Lindzey, 1970, pp. 87-88). Adler preferred to use the concept of awareness and believed that the self was made up of two parts. One part of the self was that of which a person was aware and the other part is that of which a person was unaware. Both served to provide consistency in behavior (Manaster & Corsini, 1982, p. 10). Self was considered to be a conscious construct by phenomenological theorists such as Rogers (Hall & Lindzey, 1970, p. 529), and some humanistic theorists such as R. May (1953, p. 80).

Allport (1955, p. 50) and Adler (Ansbacher, H. & R., 1964, p. 124) believed that self served as motivation for long term or life goals. Bandura (1977) believed that self served as an incentive for conduct (pp. 138-139). Satir (1971) stated that self had an influence on faith in one's own competence (p. 22).

In summary, the different theorists tended to consider self as having varying degrees of significance to the total personality.

Measurement of self is difficult as it is judged by arbitrary standards. Ellis suggested avoiding self-ratings. He felt persons should accept their humanity and evaluate only their behaviors. Rather than evaluating a life-style as being good or bad, a person can avoid evaluating the self by adopting the philosophy of choice such as "I choose to live this way" (Ellis & Harper, 1975, pp. 204-205).

It appears that theorists who considered self as an important aspect of personality have generally accepted the fact that there are both biological and social influences in the development of self. Adler considered biological and environmental factors as providing the "bricks" which the individual built into a style of life as he interacted in his

social milieu (Ansbacher, H. & R., 1964, p. 207). In the process of self actualization, Maslow emphasized a biological component that developed in a social sphere (Maslow, 1968, p. 190).

There appeared to be some agreement that self-worth developed initially in the family, the first five or six years being the most important developmental period. Freud believed that the personality, or self, was set by the end of the fifth year and that subsequent growth was an elaboration of this basic structure (Hall & Lindzey, 1970, p. 45). Although the time lines may not be exact, others in theoretical agreement with this general time frame were Adler (Ansbacher, H. & R., 1964, p. 181), Coopersmith (1967, p. 5), and Satir (1972, p. 24).

Allport noted the emergence of seven selves, each of which appeared at a different developmental stage. These seven selves included: bodily self, self-identity, and self-esteem which emerged during the first three years; extension of self and self-image which surfaced between the ages of four and six; self-awareness which appeared between the ages of six and twelve; and propriate striving which appeared during adolescence. The emergence of long range goals was believed to occur during this last stage (Hall & Lindzey, 1970, p. 269).

Rogers, along with Combs and Snygg, believed that all behavior was determined by the total perceptual field and that people had a basic need for adequacy and strove to enhance themselves within their phenomenal field. Thus Rogers saw the self as having a need to grow or to become actualized to use Maslow's terms (Dinkmeyer, 1965, pp. 187-188). This latter view implied that the self was involved in a continual process of growth and adjustment.

Research on Self-Esteem

The findings referred to in this section of the paper will deal only with studies of self-esteem studies that involved school age children. Pertinent literature generally supported the belief that self concept measures were relatively stable through the school years (Battle, 1976, p. 15; Carlson, 1965; Chapman & Boersma, 1979, p. 205; Coopersmith, 1967, p. 5).

Studies relating self-esteem to academic achievement have covered all levels of education. Rubin found that self-esteem showed a stronger relationship to achievement and IQ than did socioeconomic status or teacher ratings of student behavior (Rubin, 1976). A positive relationship was found between self-esteem and achievement (Muller et al., 1977, pp. 1117-18; Schnee, 1972). A cross cultural study of Filipino girls supported this finding (Watkins & Astilla, 1980, pp. 3-6). Measurement of self-esteem and achievement motivation at the kindergarten level were found to be good predictors of third grade reading success (Bridgeman & Shipman, 1978, pp. 17-28). Gifted children with high self-esteem performed better on learning tasks than did their counterparts with low self-esteem (Dean, 1977, pp. 315-318). Children having learning problems in school were found to have lower self-esteem than control groups (Battle, 1979, pp. 212-214; Legge, 1978). An extensive study showed that although they scored lower, self-esteem of brain dysfunctional children was not significantly lower than that of normal children (Battle et al., 1976).

Self-esteem was found to be related to school behavior. Students with high self-esteem tended to display more positive school behaviors, while those having low self-esteem appeared to be less attentive and also

demonstrated more negative and disruptive school behaviors (Kugle & Clements, 1980; Peck et al., 1980, pp. 45-52; Reynolds, 1980, pp. 273-277; Rubin et al., 1977, pp. 503-506; Yeger & Miezitis, 1980, pp. 31-37).

The seven year Coopersmith (1967) study on self-esteem of grade five and six students and their parents provided some interesting and sometimes unexpected findings. First it was the child's perception of his social success, rather than the peers perception of the child's social success, that determined how one values oneself. The study showed that both children with high self-esteem and children with low self-esteem were equally likely to join groups but children with high self-esteem were more likely to be active participants (pp. 51-52). In addition, social class, religion, and occupation of the father were found to be unrelated to self-esteem. The study also revealed that working mothers did not necessarily affect the self-esteem of their children. The influence on self-esteem seemed dependent on how the need to work was interpreted and evaluated in the family. When the reasons for working were understood, then self-esteem was not adversely affected (pp. 83-93).

The parental aspects studied by Coopersmith showed that mothers with high self-esteem raised children with high self-esteem and that mothers with low self-esteem raised children with low self-esteem. Mothers of children with low self-esteem were also least likely to tell the children what to do. The study also showed that substitute parents, such as grandparents, were more likely to raise children with low self-esteem. Parents of children with high self-esteem exhibited less tension between themselves and had a tendency for one parent or the other to make major decisions. One parent accepted the leadership role in a specific situation which was usually done in a role context (pp. 97-

115). Parent roles appeared to be task specific.

Coopersmith in studying personal aspects of the child, found that physical attractiveness and height were unrelated to self-esteem, but children with low self-esteem tended to start walking later than children with medium or high self-esteem (pp. 120-122). Children who were accurate in appraising their own self-esteem generally were more accurate in appraising their own intellectual abilities (p. 129). It was also found that self-esteem was negatively related to anxiety and that children with low self-esteem showed more anxiety based symptoms (p. 135).

Family size was found to be unrelated to self-esteem, but first born and only children tended to have higher self-esteem (p. 150-152). Mothers of children with low self-esteem tended to use harsher and punishing methods rather than positive or rewarding methods with their children. Children generally saw the same sex parent as being most punitive (pp. 192-195).

Coopersmith concluded that of the home based influences on self-concept, a combination of two or three of the following four were essential in the establishment of a positive self-concept: First, was "total or nearly total acceptance by parents of their children"; second, was "clearly defined and enforced limits of permissible behavior"; third, was "respect and latitude for individual actions within defined limits"; fourth, was "high parental self-esteem" (Thomas, 1973, p. 6).

A study of over 5000 adolescents in grades 11 and 12 conducted by Rosenberg (1965) who found some similar results regarding self-esteem. Rosenberg found the self-esteem of adolescents had little or no correlation to social class, religion, or nationality. He found that success in both school and interpersonal relationships was important to

self-esteem and that self-esteem was determined in the close community rather than the broader society (pp. 62-80). Rosenberg also found that marital disruption had more effect on anxiety level than on self-esteem. Children of mothers who remarried tended to have lower self-esteem than children of mothers who did not remarry (pp. 86-98). Parental interest, love, respect and the child's feeling that one is important to a significant other were essential aspects in developing high self-esteem (pp. 144-146). Rosenberg also found a positive relationship between low self-esteem and anxiety (p. 166).

The Rosenberg study also measured self-esteem as it relates to birth order. Children from single child families tended to have higher self-esteem than children in other birth order positions, the difference being most notable in boys (pp. 107-112). In two-children families sibling structure did not appear to have a bearing on self-esteem (p. 112). If there were three or more children than the sex distribution of siblings was found to be a factor in self-esteem. Among males, the self-esteem score tended to be lower if the majority of children were boys and higher if the majority of children were girls. Among females, self-esteem did not appear to be related to the majority sex of the siblings. This finding was consistent even when controlling for social class and religion (pp. 112-113). Girls tended to rate a younger brother as being the parents' favorite child while boys were less likely to do so (p. 117). One interesting finding was that younger, minority-sex boys tended to have high self-esteem although they tended to do more poorly in school than older minority sex boys or boys in equal or majority-sex sibling configurations. It also appeared that, for this group of adolescent boys, self-esteem was not influenced by school performance

nor was it influenced by involvement in group activities (p. 120-122). Self-esteem appeared to be related to many factors in the family such as relevance to others or identification with others of high or low self-esteem (Tesser, 1980, pp. 77-91).

A study of 7050 teenagers showed a strong positive linear relationship between adolescents' self-image and their perceptions of their families' interpersonal dynamics (Oberg, 1975, p. 66). A study of 730 grade five students indicated a high positive correlation between self-perceptions in the family and perceptions of their treatment in the home, their relations with parents, and their involvement in family activities (Hawkes, et al., 1957, pp. 393-399).

In summing up, it can be said that self-esteem was developed through a complex set of social interactions in which the family played an important part.

Birth Order

The importance of family constellation was noted by Freud, Jung, and Adler. Freud brought a systematic attention to parent-child relationships in understanding human motivations. Jung noted the problem of conflict between parents and child, while Adler emphasized the character structure and sibling position (Eckstein et al., 1978, p. 11). Adler stated that "it is not the child's number in successive births which influences his character, but the situation into which he is born and the way in which he interprets it" (Adler, 1978, p. 15). Adler believed that the life-pattern of every child showed the imprint of his position in the family with that position's definite characteristics. Much of the child's future attitude toward life was influenced by his place in the family constellation. In moving through life each child searched uniquely for

a place in the family by forming alliances and competitive groups within the family system (Pepper, 1971, p. 49). Family experiences were important in the development of a personal frame of reference through which the child perceived, interpreted, and evaluated the external world. Personality and character traits were believed to be dynamic rather than static. The child interacted with and influenced the family as much as the family influenced the child. The child's self-perceptions influenced others to treat him as he expected to be treated. The child endeavored to find a place in the group and these efforts were directed towards establishing feelings of security and belongingness and toward developing the ability to overcome obstacles in life (Pepper, 1971, pp. 49-50).

Adler also noted that there were some typical characteristics associated with various birth order positions that developed in the psychological environment provided by the family constellation.

The characteristics discussed in this thesis will be limited to those that appear to be most pertinent to this study. Readers wishing to gain more depth and understanding are referred to Adlerian writings such as in Ansbacher, H. and R. (1964). The characteristics noted herein are taken mostly from Eckstein, Baruth and Mahrer (1978).

According to Adler, the oldest child had a unique situation in the family as he had all of the parental attention until he was dethroned by the birth of a sibling who then became the center of attention. Usually the passage of time reduced the threat of the new arrival but the effect on the oldest child might have served as a motivator for additional striving for parental attention and approval. An oldest child tended to be very responsible and conformed closely to parental standards. A

first child had a tendency to relate better to adults than peers, to be ambitious, to be achievement oriented, to be conservative, to dislike change, and to prefer authority. An oldest child tended to serve as a pace setter for younger siblings (p. 12).

An only child was in a position of not being dethroned and tended to develop in one of two alternate directions: the first, was similar to first borns in that an only child attempted to meet the adult level of competence; the second, was that an only child remained helpless and irresponsible for as long as possible. An only child appeared to get along with people much older or much younger than themselves better than with their peers. They tended to be loners and not very sharing and had a greater tendency to expect a place without having earned it. The only child also had a tendency to become uncooperative if his or her wishes were not granted (Eckstein et al., 1978, p. 13).

The children born between the first born and the youngest child are known as middle children. The second, or middle child, has always had to share the parents with the older sibling who was viewed as a competitor. The middle child saw himself as being in a race and usually tried to overtake the first born. Depending upon the areas of competence of the oldest child, he selected areas where the first born was not proficient when he felt he could not surpass the older sibling. A middle child tended to be more sociable than the oldest child and seemed to be more sensitive to social injustices and group membership. A middle child, as with a first born child, was dethroned by the birth of a younger competitor. Successive children were included in this category except for the last child (Eckstein et al., 1978, pp. 12-13).

The middle child, of three children, had an uncertain place in the

family group as he had neither the rights of the oldest nor the privileges of the youngest. He may have felt unloved, and could have developed the belief that people were unfair to him. He may have experienced difficulty in finding his place in the family group and become discouraged. This child was prone to becoming the problem child (Pepper, 1971, pp. 52-53).

The youngest child had never experienced the position of being dethroned and also had older siblings to serve as models. They tended to be indulged, spoiled, and proficient in getting other family members to do things for them. Their behavior was often similar to that of an only child. The youngest child tended to ally with the oldest child (Pepper, 1971, p. 52).

Birth order patterns were sometimes disrupted by factors such as the adoption of a new child into the family, the birth of a handicapped child, or the death of a child in the family. Eckstein stated that the critical issue regarding an adopted child was the parental attitude towards the adoption. Family patterns were confounded by factors such as the parental attitude towards biological children and a possibility of overprotection of the adopted child. Parental attitudes towards a child with a handicap or towards the death of a child were also important. Children may be asked to help or serve as a caretaker for the handicapped sibling. They may also be compared to the memory of a deceased child.

In blended families, where parents remarried, the children gradually became part of the family constellation with the alignment being more by age than blood line (Eckstein et al., 1978, p. 12).

Being an only boy among several girls, or an only girl in a family of boys, may have affected the development of sex-role due to the child

having had feelings of being different, isolated, or of the wrong sex. The child may have fought against the sex-typed atmosphere, or may have joined it, which in turn influenced his or her masculine or feminine qualities (Ansbacher, H. & R., 1964, p. 382).

It is possible that a child occupied two positions in the family constellation and has developed some characteristics of each. If adjacent siblings were separated by a number of years the second will also have some characteristics of a first child (Pepper, 1971, p. 53). A family may be made up of subfamilies. A second subfamily is said to exist if there was a five year or more separation between consecutive siblings (Eckstein et al., 1978, p. 11). For example a family with children aged 14, 13, 12 and 5 had one subfamily of three children (oldest, middle, youngest) and had a second subfamily of one child. This last child would have developed some characteristics of an only child in the second subfamily and some characteristics of a youngest child in the total family constellation.

One other variable which may have affected family dynamics was the child's perception of which sibling was the parents' favorite. Each parent may have favored different siblings or they may not have favored any. Favoritism often resulted in pampering by the parents, or to a stirring up rivalries and jealousies between siblings. A neurotic life-style may be the result of pampering (Ansbacher, H. R R., 1964, p. 376).

Family values, parental characteristics, and the strength of the marital relationship were also important factors that influenced family interactions, but these factors were not considered in this thesis.

Research on Birth Order

Ordinal position of birth has been considered as a variable in a great number of studies spanning nearly a century. A deluge of studies appeared in the last twenty years. A wide variety of birth order effects had been investigated including types of psychopathology, attitudes, and a variety of behaviors (Schwab & Lundgren, 1978, p. 443).

It had been suggested in the Sears (1957) study, that one might expect variation in children born in different positions in any given family. Siblings conceived at different times had different genetic input from the parents. There was probably some overlap in genetic structure but absolute congruence in genetic formulation among siblings was unlikely. Monozygotic multiple births are presumably the exception. As parents gained more experience, their parenting practices were modified as new attitudes towards nurturing were formed. Each child arrived into a different family configuration along with changed family dynamics and different parenting attitudes and practices (Sears et al., 1957, pp. 407-413).

Other findings of interest emerged from Sears study. Fathers played a greater role in the upbringing of the oldest children. Middle children were expected to do more chores, and were likely to receive less time for fun from their mothers. Fathers were likely to be less involved with the youngest child while the mother tended to be more involved in the caretaking and discipline. Youngest children were the most likely to be praised. The Sears study also suggested that younger children tended to be indulged if there were three or more children but not if there were only two children. In families of three or more children, the older children received more physical punishment and

received less open affection than the younger children (pp. 414-416).

When comparing mothers' interaction with children, before and after the arrival of a new baby, it was found that mothers showed a decrease in initiating conversation and in highlighting the child's activities. Maternal attention and play decreased and there was an increase in confrontation (Dunn & Kendrick, 1980, pp. 119-132). Maternal expectations were studied using mothers of learning disabled boys, each boy being either a first born learning disabled with a younger brother or a second born learning disabled with an older brother. The brothers were not more than three years older or younger than the learning disabled boy. The families of first born learning disabled boys suffered the greatest stress as mothers tended to underestimate the learning disabled boys' ability and overestimate the normal brothers' ability. The mothers of first born learning disabled boys appeared to be more socially withdrawn and more overprotective of their children. Mothers of learning disabled second born boys also had difficulty with their expectations but were better able to adjust these expectations (Epstein et al., 1980, pp. 273-280). In a study of two child families, mothers were shown to give more complex verbal instructions to first born than second born five year old children. Mothers were also more intrusive in the first born's tasks. Girls and first born boys were found to be more involved in cleanup upon completion of tasks whereas second born boys were less likely to clean up (Rothbart, 1971, pp. 113-120).

A study of sibling alliances and competitors showed that birth order is related to interests as birth order position placed adjacent siblings against each other and to some extent makes allies of alternate siblings. Competitors tended to have different interests while allies

tended to be much alike in interests (Verger, 1968, pp. 56-59). Bragg in a study of two sibling families attending university suggested that an older sibling of the same sex served as a motivation for a younger sibling to attend university (1970, pp. 196-199). Support for this concept comes from a study of over 200 college age second borns who responded to self measures on the "Kuhn 20 Statements Test". The mean scores for those having an older sibling of the opposite sex were lower than those having an older sibling of the same sex. It appeared that the older same sex sibling served as a role model (Bigner, 1971, pp. 307-308).

Two studies using college subjects reported on the relationship of birth order to both self-esteem and subjective public esteem as determined by perceived ratings of appraisals by significant others. Subjects were first borns and later borns with the exclusion of only children. The results showed a consistent trend toward first borns having both higher self and public esteem than later borns with this characteristic being strongest in females. The results indicated that perceived appraisals of authority figures, particularly of fathers, were most influential for first born female's public esteem while the perceived appraisals of close peers are most important for first born males (Schwab & Lundgren, 1978, pp. 443-454).

The consensus indicates that each child is likely to receive different parenting and be involved in different family relationships while he in turn contributes his own uniqueness to the family constellation. The family constellation in turn influences perceptions of the self.

Definition of Self-Esteem

The construct definition by Battle is as follows: "Self-esteem as measured by the Culture-Free Self-Esteem Inventories for Children and Adults refers to the perception the individual possesses of his own worth. An individual's perception of self develops gradually and becomes more differentiated as he matures and interacts with significant others. Perception of self-worth, once established, tends to be fairly stable and resistant to change" (Battle, 1981b, p. 14).

Definition of Birth Order

True Birth Order.

With the exception of middle children, specific definitions of borth order position are self-explanatory by their labels. Birth order positions considered here were as follows: only child; first born child; second or middle born child; middle-of-three; and youngest child. A middle born child was one born between the first born child and the youngest child. A special situation was noted for the middle child of three children born in a family.

Composite Birth Order.

Composite birth order categories were made up of members who attain their birth order labels as a result of their birth order position in the family plus those who obtained similar labels from their membership in a subfamily.

An age difference of five or more years between adjacent siblings constituted a separation of children into separate subfamilies. In this case the older of these two siblings constituted the last, or youngest, child in the elder subfamily. The younger sibling was the beginning of the younger subfamily. Birth order labels were then assigned according

to membership in the subfamily as compared to membership in the total family constellation.

Composite birth order categories were composed of persons who attained a true birth order label from their family configuration plus those who attained their birth order definition as a result of their membership in a subfamily.

The focus of this research was to study the relationship between birth order and self-esteem in children. Specific hypotheses will be presented at the conclusion of chapter three.

CHAPTER III

METHOD

Chapter three presents a description of the sample selected for the study, a description of the instruments used, and a description of the procedure involved in conducting the study. Hypotheses are also presented.

Sample

The sample for this study was representative of grade five students throughout Edmonton Public Schools and was part of an extensive "Affective Project" involving grade five and grade eight students. In this project self-esteem was being studied in relation to academic grades, locus of control, self-concept of ability, and school achievement. The sample composition was determined by the Edmonton Public Schools Department of Student Assessment. Schools which provided the sample were selected to obtain a representative sample based on socioeconomic status, school size, and ability level as determined by scores on Canadian Cognitive Abilities Tests. This sample consisted of 587 out of the total grade five population of 4500 students in the Edmonton Public Schools district.

All grade five students from twelve elementary schools were selected. These schools covered a wide socioeconomic range from an inner city school to a recently opened school in a new area of the city. In total, there were 28 classrooms involved of which seven were split-grade classes and 21 were single-grade classes.

This sample was consistent with the sample used by Coopersmith in that he used grade five and six preadolescent children. The present sample differed in that the Coopersmith study used only middle-class

subjects while this study used subjects from a variety of socioeconomic backgrounds (Coopersmith, 1967, p. 8).

Instruments

Family Constellation Data

In order to determine familial birth order position this author constructed a questionnaire on which respondents were asked to list chronologically the names of all children in their families including themselves (Appendix A). Respondents were also asked to indicate the ages and relationship of siblings to themselves. From this data, the sex of siblings, numerical birth order in terms of total children, and birth order category for each respondent was determined. Categories of interest were only, first born, middle born, and last born children.

Scoring - Family Constellation Data

The first consideration, after making sure that all children were listed in order of age, was to note age gaps of five or more years between adjacent siblings which divided the children into subfamilies. Each respondent was then classified according to his birth order membership in the total sibling structure or sibling subfamily.

An only child was defined as a child who was an only child in a family or subfamily. A first born child was the eldest of more than one child in the family or a subfamily. A youngest child was the last born child in the family or a subfamily. A second born, or middle child, was a child born between a first and last born in either a family or a subfamily. A middle-of-three child was also identified to distinguish this subclass of middle child.

Each respondent was classified into an appropriate birth order

category, and was also classified with other characteristics to facilitate statistical analysis. The sex of each child was noted as was the birth order membership in a family or subfamily. When a child was a member of a subfamily, it was noted if this was the first born subfamily or later born subfamily of children. Total number of children in the family and the actual numerical birth order position were also noted for each respondent.

An only sex child, whose family constellation consisted of three or more siblings all of the opposite sex, was not analyzed for birth order position. Similarly birth order data on children of blended families was not analyzed as information pertaining to the age of the child at the time of blending, with other families, was unavailable. Pertinent literature reviewed in chapter two, suggested that these two groups may provide confounding variables and were therefore excluded from birth order analysis.

Culture-Free Self-Esteem Inventory (CFSEI) - Form A

Battle stated that the CFSEI (Appendix B) is a "self report scale which is intended to measure an individual's perception of self". It has been standardized on boys and girls in grades three through nine and can be administered to groups or individuals. Administration time for this instrument is approximately twenty minutes (Battle, 1981b, pp. 7-8).

Form A of the CFSEI for children contained 60 items and five self-esteem subscales. The subscales measured: a general self-esteem, a social or peer related self-esteem, an academic or school related self-esteem, a parent or home related self-esteem, and a lie score which measured defensiveness. Fifty items were intended to measure self-esteem according to the four self-esteem subscales while the remaining

10 items were intended to measure defensiveness. Self-esteem items were divided into two groups. One group indicated high self-esteem while the other group indicated low self-esteem. The individual checks each item with a "yes" or "no".

Two excerpts from the CFSEI illustrate the kinds of items presented:

2. Boys and girls like to play with me. Yes. No.

41. I worry a lot. Yes. No.

In these instances "yes" responses reflect opposite directions in self-esteem. In the first instance a "yes" answer suggested a positive indicator of social self-esteem, while in the second instance the "yes" answer suggested a negative direction in general self-esteem. Conversely, "no" responses to both items had the opposite meaning.

Scores for self-esteem were represented by the total number of items checked which indicated high self-esteem. This gave the total self-esteem score. Subscale self-esteem scores were determined by counting checked responses indicating high self-esteem for each item representing a particular subscale (Appendix C). The total score was equal to the sum of subscale scores excluding the Lie Scale. Maximum scores were as follows: General Self-Esteem, 20; Social Self-Esteem, 10; Academic Self-Esteem, 10; Parent Self-Esteem, 10; and Total Self-Esteem, 50. The maximum lie score is 10. Minimum possible scores in all areas were zero.

Research on the CFSEI

Due to the recency of its publication, this instrument had not been reviewed in Buros' Mental Measurement Yearbooks. Literature was confined to that performed by Battle, the author, in developing and norming the CFSEI.

Reliability for Form A was established using test-retest procedures of 198 boys and girls in grades three through six. Correlations for the total sample ranged from .81 to .89 with values for boys being from .72 to .93 and values for girls being from .74 to .90. Test-retest reliability of 33 grade six students, after two years, indicated a correlation of .74 (Battle, 1981b, pp. 11-12).

Internal consistency was determined by a multiple factor analysis using an Alpha (kr20) procedure. Alpha coefficients for each of the five subscales are as follows: General, .71; Social, .66; Academics, .67; Parents, .76; and Lie Scale, .70 (p. 13).

Validity of the CFSEI was approached in two ways. Content validity was built into the instrument by developing a construct definition of self-esteem and by writing items that covered all areas of the construct.

> Self-esteem, as measured by the Culture-Free SEI for children and Adults, refers to the perception the individual possesses of his own worth. An individual's perception of self develops gradually and becomes more differentiated as he matures and interacts with significant others. Perception of self-worth, once established, tends to be fairly stable and resistant to change.

The 60 items selected for Form A were "the most discriminating ones selected from a pool of 150 items" (p. 14).

Concurrent validity was established by comparing results on the CFSEI with scores obtained by Coopersmith's Self-Esteem Inventory (1967) on 198 grade three through six students. Correlations between scores on both instruments were significant at all grade levels for both sexes.

Correlations for the total sample ranged from .71 to .80. Correlations ranged from .72 to .84 for boys and from .66 to .91 for girls (p. 14).

It appeared that the CFSEI had sufficient reliability and validity to be used in this study.

Data Gathering Procedures

The Director Instructional Resources/Research/Liaison Edmonton Public Schools consented to allow this birth order study to take place as an adjunct to the Edmonton Public Schools' Affective Project. This department made the initial contact with school administrators and asked for their cooperation in the study and facilitated access to self-esteem information by allowing this writer to work with the Department of Student Assessment and the Affective Project Teacher, Edmonton Public Schools. It was through consultation with persons working on the Affective Project that this writer produced the Family Constellation Data sheet.

As part of his job, the Project Teacher visited each school principal to explain the project. He also kindly explained to them what the birth order study involved. This initial contact set the stage and facilitated this writer's contact with the school administrators and simplified any explanations as to what was requested of teachers in their schools. In all cases the administrators were cooperative in helping with the study.

To simplify distribution and collection of materials, it was decided to send Family Constellation Data sheets out to each school as a package along with the other Affective Project materials. Instructions for administering the Family Constellation Data sheets and a memorandum regarding administration procedures for the Affective Project were also sent to each teacher (Appendix D). Schools received these materials

during the early part of May, 1982.

Instruments were administered during the week of May 17 to 21 by the respective classroom teachers. Each student responded by writing directly on the Family Constellation Data sheet. Responses to items on the self-esteem inventory were recorded on a separate answer sheet. All instruments were then returned to Edmonton Public Schools Student Assessment where the self-esteem answer sheets were machine scored. A print out of each subject's self-esteem scores was obtained by this writer along with the completed Family Constellation Data sheets. These sheets were hand analyzed, coded, and matched with each subject's respective self-esteem scores. Each respondents' birth order and self-esteem data was then recorded on a form to facilitate statistical analysis.

Data Analysis

Hypotheses were tested by comparing mean scores using the Statistical Program for Social Sciences (SPSS) designed for batch or interactive use on a computer terminal (Nie, Hull, Jenkins, Steinbrenner & Bent Ed., 1975). Self-esteem scores were analyzed relative to the factors of sex and birth order.

A two-way analysis of variance (anova) procedure was used when more than two means were compared. Data were submitted to anova procedures using a fixed model with unequal cell frequencies that allows up to five factors in each design (Kim & Kohout, 1975, pp. 398-433).

In certain situations only two means were compared and a traditional t-test procedure was used. The t-test was a particular instance of the anova procedure used for comparing two mean scores (Ferguson, 1976, pp. 233-234). A pooled variance estimate of t was used when comparing homogeneous groups and a separate variance estimate of t was used when

comparing heterogeneous groups (Nie et al., 1975, pp. 267-271). This method of using a separate variance estimate of t was not unlike the Cohran and Cox method (Ferguson, 1976, p. 168). Homogeneity of groups referred to the degree of similarity between variances of the two groups. Homogeneous groups were said to exist when differences in variance were slight or non existent. Groups were said to be heterogeneous when a statistically significant difference occurred in the variances of the two groups. A simple F test was used to determine homogeneity. The value of F was computed by dividing the larger variance by the smaller variance and the probability was then determined (Nie et al., 1975, pp. 269-270).

Probability levels were based on two-tail tests for t-test procedures and one-tail tests for F distributions used in analysis of variance procedures. Significance level for hypothesis testing was selected at .05.

The Scheffe multiple comparison procedure was used to locate sources of significance found in anova procedures. This was a strict method that is exact even for unequal cell sizes (Kim & Kohout, p. 428). The Scheffe test was predisposed towards fewer significant differences than some other multiple comparison methods and its author recommended using a less rigorous significance level such as the .01 level (Ferguson, 1976, p. 297). This test used an F distribution, and a one tail technique comparing computed values of F to a critical value of F. Pairs of means were contrasted and F values equal to or greater than a critical F were deemed significant.

Tests relating to birth order used two classifications of birth order. One was the true birth order position, relative to the family as

a whole, while the second was a composite birth order position. A composite birth order category included persons of a true birth order position plus persons who achieved a similar birth order definition in a subfamily. In essence a composite birth order category included some subjects having dual birth order characteristics as well as those who truly fit the semantic definition.

Hypotheses

Directional hypotheses proved to be most useful when measuring treatment effects on dependent samples or when comparing independent samples when differences are expected. In this particular research it was unknown what effects birth order will have on the various measures of self-esteem. Pertinent literature pointed out some inconsistent expectations as it related to a general self-concept. It also pointed out some typical characteristics of each birth order group but it would be presumptuous to assume that these characteristics necessarily influenced self-esteem. For example, middle children may not develop higher levels of social esteem just because they tended to be more sociable than other birth order groups. The literature supported greater scholastic achievement in first borns, compared to later borns, but it cannot be assumed that they have greater academic esteem. In essence this study was attempting to measure birth order group membership effects on the various self-esteem scores. Since this study was dealing with independent samples, based on birth order group characteristics, the hypotheses were best presented in null form. The null form indicates that no difference exists between population means for each of the birth order groups.

Hypothesis 1

There is no significant difference between mean scores on General Self-Esteem for each of the birth order groups.

Hypothesis 2

There is no significant difference between mean scores on Social Self-Esteem for each of the birth order groups.

Hypothesis 3

There is no significant difference between mean scores on Academic Self-Esteem for each of the birth order groups.

Hypothesis 4

There is no significant difference between mean scores on Parental Self-Esteem for each of the birth order groups.

Hypothesis 5

There is no significant difference between mean scores on Total Self-Esteem for each of the birth order groups.

CHAPTER IV

RESULTS

The content of chapter four includes the findings and statistical data pertaining to the testing of the specific hypotheses as presented in chapter three.

Sample

Each of the twelve schools participated with 27 out of a possible 28 classrooms providing data for this study. The original sample called for a total of 587 subjects but one teacher of a split grade five-six class elected not to participate in this study which resulted in a loss of 15 subjects. Thirty additional subjects were excluded because of missing data on either, or both, the self-esteem inventory and the family data sheet. In total, 542 subjects were included in the actual sample.

Descriptive statistics for the total sample, on each measure of self-esteem, were calculated and can be seen in Table G (Appendix E).

Sample Crosstabulations

Subjects were analyzed for sex, birth order, and subfamily composition with results appearing in Table 1.

Of the 63 middle born children, 37 were also members of the middle-of-three subcategory having membership in a family or either of the two subfamilies. A distribution of middle-of-three children can be found in Table A (Appendix E). Due to the small number of subjects in the middle born group (n=63) it seemed impractical to divide this group into further subgroups as each of the other birth order categories had in excess of 100 members. Literature using Adlerian birth order categories generally does not distinguish the mid-of-three subcategory

TABLE 1

Sample Composition by Sex, Birth Order and Family Membership

Sample	Group	Family	First Subfamily	Later Subfamily[c]	Total
Only Child	N	34	27	41	102
	Boys	19	14	21	54
	Girls	15	13	20	48
First Born	N	111	20	15	146
	Boys	59	6	8	73
	Girls	52	14	7	73
Middle Born[a]	N	55	6	2	63
	Boys	30	1	1	32
	Girls	25	5	1	31
Youngest Child	N	148	23	11	182
	Boys	80	12	5	97
	Girls	68	11	6	85
Single Sexed	N	4	1	1	6
	Boys	3	0	0	3
	Girls	1	1	1	3
Blended[b]	N	43	-	-	43
	Boys	16	-	-	16
	Girls	27	-	-	27
Totals	N	395	77	70	542
	Boys	207	33	35	275
	Girls	188	44	35	267

[a] Middle-of-three subgroup included in this category.
[b] Children of blended families were not classified into subfamilies.
[c] Not more than two subfamilies were found in any of the families sampled.

of middle children. A t-test was performed to see if there were significant differences in mean scores of the two groups. The results indicated that there were some differences in variance (Table B) but that mean scores for mid-of-three were not significantly different from those of middle borns generally (Table C, Appendix E). This finding supports Adlerian literature which does not differentiate between middle-of-three and middle borns. It also provides statistical credence to the combining of the two groups into one main category, middle children.

Findings

Of the sample (n=493) analyzed for birth order position 147 subjects obtained their birth order label in a subfamily rather than from their true birth order position in the family. Only middle born subjects have the same sample members in both true and composite birth order categories. The true birth order cross tabulations by sex and subfamily may be seen in Table D (Appendix E). Mean scores for the composite birth order groups can be seen in Table E while mean scores for the true birth order groups may be seen in Table F (Appendix E).

Hypotheses

All hypotheses were tested by using a two-way anova procedure relating mean self-esteem scores to sex and birth order. Anovas were performed using both composite and true birth order categories.

Hypothesis 1

Hypothesis 1 states that there is no significant difference between mean scores on General Self-Esteem for each of the birth order groups.

Results of the analysis for Hypothesis 1 are shown in Tables 2 and 3.

Table 2

Two-Way Anova -- General Self-Esteem by Sex and Composite Birth Order

Source of Variation	SS	DF	MS	F	Prob.
Main Effects	45.345	4	11.336	0.841	0.499
Sex	13.581	1	13.581	1.008	0.316
Birth Order	30.876	3	10.292	0.764	0.515
Two-Way Interactions	12.943	3	4.314	0.320	0.811
Explained	58.289	7	8.327	0.618	0.741
Residual	6534.883	485	13.474		
Total	6593.172	492	13.401		

Inspection of Table 2 reveals that there are no significant differences among composite birth order groups as it relates to General Self-Esteem. This finding supports the acceptance of Hypothesis 1 relative to composite birth order.

Inspection of Table 3 also reveals no significant differences in General Self-Esteem among the true birth order categories. This finding also supports the acceptance of Hypothesis 1 relative to true birth order category.

Hypothesis 1 was therefore accepted.

Table 3

Two-Way Anova -- General Self-Esteem by Sex and True Birth Order

Source of Variation	SS	DF	MS	F	Prob.
Main Effects	89.648	4	22.412	1.605	0.172
Sex	19.206	1	19.206	1.376	0.242
Birth Order	70.460	3	23.487	1.683	0.170
Two-Way Interactions	0.933	3	0.331	0.024	0.995
Explained	90.645	7	12.946	0.928	0.485
Residual	5290.047	379	13.958		
Total	5380.691	386	13.940		

Hypothesis 2

Hypothesis 2 states that there is no significant difference between mean scores on Social Self-Esteem for each of the birth order groups.

Results of data analysis relative to Social Self-Esteem can be seen in Tables 4 through 8.

Examination of Table 4 shows no significant differences among mean Social Self-Esteem scores for each of the composite birth order groups. This finding supports acceptance of Hypothesis 2 when using composite birth order categories.

Table 4

Two-Way Anova -- Social Self-Esteem by Sex and Composite Birth Order

Source of Variation	SS	DF	MS	F	Prob.
Main Effects	37.066	4	9.266	1.614	0.169
Sex	1.069	1	1.069	0.186	0.666
Birth Order	36.036	3	12.012	2.093	0.100
Two-Way Interactions	10.263	3	3.421	0.596	0.618
Explained	47.329	7	6.761	1.178	0.314
Residual	2783.866	485	5.740		
Total	2831.196	492	5.754		

Table 5

Two-Way Anova -- Social Self-Esteem by Sex and True Birth Order

Source of Variation	SS	DF	MS	F	Prob.
Main Effects	55.407	4	13.852	2.447	0.046*
Sex	2.696	1	2.696	0.476	0.491
Birth Order	52.966	3	17.655	3.118	0.026*
Two-Way Interactions	7.409	3	2.470	0.436	0.727
Explained	62.816	7	8.974	1.585	0.138
Residual	2145.813	379	5.662		
Total	2208.629	386	5.722		

*Significant at the .05 level.

Inspection of Table 5 shows that a significant true birth order effect was found relative to Social Self-Esteem. On the basis of this finding acceptance of Hypothesis 2 is untenable as it relates to true birth order. Hypothesis 2 is therefore rejected.

Further analysis was performed to locate the source of differences among the true birth order categories. Results of the a posteriori analysis can be seen in Tables 6 through 8.

Table 6

Descriptive Statistics, Standard Errors, Range of Scores on Social Self-Esteem for True Birth Order Categories

Group	N	Mean	SD	S. Error	Range
Only	34	5.7941	2.8368	0.4865	0-10
First	131	6.2901	2.3419	0.2044	0-10
Middle	63	7.1905	2.0069	0.2528	2-10
Youngest	159	6.5157	2.4231	0.1922	0-10
Total	387	6.4858	2.3920	0.1216	0-10

Table 7

Analysis of Variance — Mean Social Self-Esteem Scores

By True Birth Order Position

Source	SS	DF	MS	F	Prob.
Between Groups	52.7122	3	17.5707	3.121	0.0260*
Within Groups	2155.9326	383	5.6291		
Total	2208.6448	386			

* Significant at the .05 level.

The results of this analysis can be seen in the Scheffe procedure, Table 8, where means for each true birth order category were contrasted to all the other means on Social Self-Esteem.

Table 8

Scheffe Test — F Values for Pairs of Means on Social Self-Esteem

Birth Order Category	Only Children	First Born	Middle Children	Youngest Children
Only	-	1.181	7.649*	2.591
First	1.181	-	6.127	0.650
Middle	7.649*	6.127	-	3.650
Youngest	2.591	0.650	3.650	-
Total	0.478	0.666	4.780	0.018

* Significant — Critical $F_{.10} = 6.24$.

Inspection of Table 8 shows that no group varies significantly from the mean score of the total group. The location of the significant difference is in the contrast of mean scores of only children and middle born children. When considering true birth order categories, middle borns scored significantly higher than only children on the Social Self-Esteem subscale.

In sum, Hypothesis 2 was accepted when considering composite birth order categories but was rejected when considering true birth order categories.

Hypothesis 3

Hypothesis 3 states that there is no significant difference between mean scores on Academic Self-Esteem for each of the birth order categories.

Results of data analysis for Hypothesis 3 can be seen in Tables 9 and 10.

Table 9

Two-Way Anova — Academic Self Esteem by Sex and Composite Birth Order

Source of Variation	SS	DF	MS	F	Prob.
Main Effects	16.721	4	4.180	0.743	0.563
Sex	15.845	1	15.845	2.815	0.094
Birth Order	0.671	3	0.224	0.040	0.989
Two-Way Interactions	7.503	3	2.501	0.444	0.721
Explained	24.224	7	3.461	0.615	0.744
Residual	2729.853	485	5.629		
Total	2754.076	492	5.598		

Inspection of Table 9 shows that there is no significant composite birth order effect as it relates to Academic Self-Esteem. Findings support acceptance of Hypothesis 3.

Table 10

Two-Way Anova -- Academic Self-Esteem by Sex and True Birth Order

Source of Variation	SS	DF	MS	F	Prob.
Main Effects	13.656	4	3.414	0.581	0.677
Sex	4.726	1	4.726	0.804	0.370
Birth Order	8.403	3	2.801	0.476	0.699
Two-way Interactions	6.075	3	2.025	0.344	0.793
Explained	19.731	7	2.819	0.479	0.849
Residual	2227.970	379	5.879		
Total	2247.701	386	5.823		

Two-way anova results, in Table 10, relating Academic Self-Esteem to sex and true birth order also show no significant true birth order effect. This finding also supports acceptance of Hypothesis 3.

Based on these supportive findings, Hypothesis 3 was accepted.

Hypothesis 4

Hypothesis 4 indicates that there is no significant difference between mean scores on Parental Self-Esteem for each of the birth order categories.

Analysis of data pertaining to Hypothesis 4 can be seen in Tables 11 and 12.

Table 11

Two Way Anova — Parent Self-Esteem by Sex and Composite Birth Order

Source of Variation	SS	DF	MS	F	Prob.
Main Effects	22.681	4	5.670	1.224	0.300
Sex	11.140	1	11.140	2.405	0.122
Birth Order	11.755	3	3.918	0.846	0.469
Two-Way Interactions	13.779	3	4.593	0.992	0.396
Explained	36.460	7	5.209	1.125	0.346
Residual	2246.179	485	4.631		
Total	2282.639	492	4.640		

No statistical significance can be found in Table 11 which indicates that there is no significant composite birth order effect on Parental Self-Esteem. In relation to composite birth order, Hypothesis 4 is supported.

Table 12

Two-Way Anova — Parent Self-Esteem by Sex and True Birth Order

Source of Variation	SS	DF	MS	F	Prob.
Main Effects	17.465	4	4.366	0.937	0.442
Sex	1.189	1	1.189	0.255	0.614
Birth Order	16.184	3	5.395	1.158	0.326
Two-way Interactions	2.326	3	0.775	0.166	0.919
Explained	19.791	7	2.827	0.607	0.750
Residual	1766.142	379	4.660		
Total	1785.933	386	4.627		

Inspection of Table 12 shows no significant true birth order effect on Parental Self-Esteem and this finding supports Hypothesis 4.

Based on these findings, Hypothesis 4 was accepted.

Hypothesis 5

Hypothesis 5 indicates that there is no significant difference between mean scores on Total Self-Esteem scores for each of the birth order categories.

Statistical analysis pertaining to Hypothesis 5 can be seen in Tables 13 and 14.

Table 13

Two-Way Anova -- Total Self-Esteem by Sex and Composite Birth Order

Source of Variation	SS	DF	MS	F	Prob.
Main Effects	71.683	4	17.921	0.244	0.913
Sex	6.575	1	6.757	0.092	0.762
Birth Order	65.467	3	21.822	0.297	0.827
Two-Way Interactions	112.417	3	37.472	0.511	0.675
Explained	184.102	7	26.300	0.358	0.926
Residual	35398.055	485	73.398		
Total	35782.156	492	72.728		

It can be seen in Table 13 that there are no significant composite birth order effects. This data, using composite birth order categories, supports acceptance of Hypothesis 5.

Table 14

Two-Way Anova -- Total Self-Esteem by Sex and True Birth Order

Source of Variation					
Main Effects	258.195	4	64.549	0.843	0.499
Sex	7.619	1	7.619	0.099	0.753
Birth Order	251.849	3	83.950	1.096	0.351
Two-Way Interactions	19.726	3	6.575	0.086	0.968
Explained	277.922	7	39.703	0.518	0.821
Residual	29024.859	379	76.583		
Total	29302.781	386	75.914		

The data in Table 14 shows no significant difference in mean scores on Total Self-Esteem for each of the true birth order categories. This finding also supports acceptance of Hypothesis 5.

Hypothesis 5 was accepted.

Two-way anovas relating mean Lie scores to sex and birth order were also performed. No statistical significance was found when mean scores were analyzed for composite or true birth order categories. These results can be seen in Tables H and I (Appendix E).

Although not specifically referred to in this chapter, sex of the child was not significantly related to any of the self-esteem measures. No significant difference based on sex was found in any of the two-way anova procedures performed in this study.

CHAPTER V

SUMMARY AND DISCUSSION

The content of chapter five includes a summary of the study along with some discussion and implications of the findings. Some suggestions for further research are also included.

Summary

The purpose of this study was to investigate the relationship between birth order and self-esteem in children. The Culture-Free Self-Esteem Inventory, which provided five self-esteem scores as well as a lie score, was used to measure self-esteem. The five self-esteem scores were: General Self-Esteem; Social Self-Esteem; Academic Self-Esteem; Parent Self-Esteem; and Total Self-Esteem. The four birth order categories used were: only children; first born children; middle children; and youngest children. Mean scores on each self-esteem subscale were obtained for each of the birth order categories. These were analyzed for differences through a two-way analysis of variance technique using mean self-esteem scores by sex and birth order.

It was hypothesized that there would be no significant difference between mean scores on each self-esteem measure for each of the birth order categories.

Findings

When birth order categories were composed of subfamilies, often providing dual birth order membership, the results showed no significant birth order effects.

The factor of subfamily dual birth order membership was controlled and two-way analysis of variances were performed by using mean self-

esteem scores by true birth order position and sex. The use of this procedure resulted in finding a significant difference on the Social Self-Esteem subscale (Table 5). In all cases, and for all subscales, no birth order group differed significantly from the mean of the total group on each measure. The significant difference on the Social Self-Esteem subscale was due to middle born children scoring significantly higher than only children (Table 8). The most notable difference in these two groups was seen in the range of scores for both groups (Table 6). No child in the middle born group scored less than two while all other birth order groups had minimum scores of zero on the Social Self-Esteem scale.

Inspection of anova procedures revealed that sex of child was not significantly related to self-esteem. This finding supported the norming data for the Culture Free Self-Esteem Inventory where items reported that "sex is not a significant variable affecting self-esteem" (Battle, 1981b, p. 21).

Discussion Related to Birth Order Research

It would appear that studies relating to birth order are best approached by using true birth order categories rather than combined birth order categories. The combining of subfamily birth order classification along with true birth order classification had a tendency to move birth order differences nearer to the mean of the total group. In other words, combining birth order groups minimized birth order differences. This was most evident when looking at only children whose subfamily distribution showed a relatively equal number of subjects in the family, first subfamily, and later subfamily. The mean Social Self-Esteem score for the sample was 6.50. This mean for the true only child

was 5.79. When additional subfamily only children were included, with the true only children, the mean Social Self-Esteem score became 6.40 (Tables E and F, Appendix E).

The general findings concurred with literature supportive of no significant differences between mean scores of a particular birth order group contrasted to mean scores of the total group (Miller & Maruyama, 1976, pp. 123-131; Nystul, 1974, pp. 211-215). Caution must be used when making specific and definite comparisons between studies as many different constructs and definitions were used. Wylie (1961) suggested discussing self-esteem studies as a group (p. 40). Researchers used various self terms and measuring instruments interchangeably (Calhoun & Morse, 1977, p. 318). In doing so, generalizations of self-concept or self-esteem must be used to make comparisons. When birth order studies are considered there are a number of permutations and combinations of birth order variables to take into account. Some of these variables were actual numerical birth order position, sex of children, order of sex, number of children, spacing of children, and so on. It was unlikely that any two studies had exactly the same constructs, criteria and sample composition. Results obtained in two-child families may not be pertinent to findings in families with more than two children (Rosenberg, 1965, p. 112; Sears et al., 1957, pp. 414-416). As found in this study, the combining of birth order groups tended to minimize differences as scores moved nearer to the sample mean. The variance of combined groups were likely to be quite different than that of specific groups. This can be observed in Table B (Appendix E) where it is conceivable that specific birth order position could contribute its unique variance. With considerations such as these, it would appear that any comparison between birth order and self-esteem studies was

likely to be a generalization at best.

Discussion of Trends Found in This Study

Although statistically significant differences were not generally found, there were some noticeable trends observed when true birth order category means were compared for each of boys, girls, and total sample (Tables E and F, Appendix E). Some of these trends may provide the basis for useful hypotheses in a clinical or counselling setting even though the results were not statistically significant.

Middle children scored consistently higher than the other birth order groups, and significantly higher than only children, on Social Self-Esteem.

This finding can be explained by considering birth order characteristics of both the middle child and the only child. Adler stated that the middle child was more sociable than children of other birth order groups and that the only child was more isolated from his peer group and preferred adult company (Eckstein, Baruth & Mahrer, 1978, pp. 12-13). Literature presented in chapter two suggested that self-esteem developed in a social sphere. Rosenberg stated that interpersonal relationships were important in the development of self-esteem, particularly the close community (Rosenberg, 1965, p. 80). The two groups, because of their differences in social interactions, were likely to develop self-esteem related to their particular social situations.

Birth order characteristics of first born children also indicated their tendency to prefer adult company to peer company (Eckstein, Baruth & Mahrer, 1978, pp. 12-13). An examination of Table 8 suggested that the difference between middle borns and first borns was also approaching significance on the Social Self-Esteem subscale (F=6.13,

Scheffe Critical, $F_{.10}$=6.24).

First born children scored consistently above all other birth order groups on Academic Self-Esteem. Perhaps this could be expected when one considered the birth order characteristics of the first born child. This child tended to be ambitious, achievement oriented, and conforming to parental standards (Eckstein, Baruth & Mahrer, 1978, pp. 12-13).

In families where school was deemed important, which this author assumes to be the present societal norm, first born children in trying to meet parental expectations developed a higher level of Academic Self-Esteem through their school success. This was supported by the Rosenberg (1965) study in which he stated that success in school was an important factor toward the development of self-esteem (pp. 62-80). Other literature also supported the idea that first born children were likely to do better academically than other birth order groups (Adams et al., 1972, pp. 155-164; Glass et al., 1974, pp. 807-811; Wark et al., 1974, pp. 221-226).

First born children scored consistently higher on Parent Self-Esteem, a result which may be related to their tendency to please parents. Youngest children were consistently a close second to first born children on Parent Self-Esteem. Youngest children tended to ally with the oldest, or first born child (Pepper, 1971, p. 52). Allies tended to be much alike (Verger, 1968, pp. 56-59) and perhaps the oldest sibling served as a model or motivator (Bragg, 1970, pp. 196-199; Ansbacher, H. & R., 1956, p. 380). High self-esteem of youngest children developed through parent-child interactions, may best be explained by a finding in the Sears study as youngest children were most likely to be praised by parents (Sears et al., 1957, pp. 414-416).

This finding suggested positive social interactions between parents and youngest child.

Only children, as well as being lowest on Social-Self Esteem, were also consistently lower on other measures of self-esteem (Table F, Appendix E). This may be related to their tendency to remain helpless and irresponsible for as long as possible if they cannot meet the adult level of competence (Eckstein et al., 1978, p. 13). Adler suggested that only children may be born into timid family environments in that the family could be expected to have more children but does not do so. Perhaps economic worries and pessimism about children could lead to a family atmosphere full of anxiety and doubt (Ansbacher, H. & R., 1956, p. 381). This kind of atmosphere may adversly affect the self-esteem of the child.

This finding was in contrast to the Coopersmith and Rosenberg findings where it was found that only children rated high on self-esteem (Coopersmith, 1967, pp. 150-152; Rosenberg, 1965, pp. 107-112). The reason for this contrast in findings was unclear but parenting practises and values may have changed since the 1960's. Direct comparisons were difficult as the Coopersmith and Rosenberg samples differed in social class from that used in this study, but socioeconomic status may not be a contributing factor. Rosenberg (1965) found that social class was weakly or not related to self-esteem (pp. 62-80). A later study by Rosenberg and Pearlin (1978) found no relationship between self-esteem and social class for young children, a modest relationship for adolescents, and a moderate relationship for adults (pp. 53-77).

Self-esteem scores of only children did not parallel those of youngest children. This may tend to refute the idea that youngest

children may act like only children (Pepper, 1971, p. 52). This, of course, is an oversimplified comparison as other family dynamics are also involved. For only children the most obvious family differences are an absence of sibling interactions, an absence of sibling role models, and possibly an absence of sibling caretakers.

Observation of Table E (Appendix E) indicates that children of blended families scored consistently lower than other groups on all measures of self-esteem. This was in agreement with Rosenberg who noted that children of mothers who remarried tended to have children of lower self-esteem than those who did not remarry (1965, pp. 86-98). Further research appears warranted regarding low self-esteem of children of blended families.

When considering the middle born group of children in this study one must make note of the differences in variance between middle born and middle-of-three children who were combined into one group (Table C, Appendix E). Variance discrepancy may have three sources: chance, different sample sizes with more chance of larger variance in the smaller sample, and actual variance contributed by true birth order position.

Implications

Trends as noted in this study may prove to be useful in a counselling setting where a counselor may draw hypotheses about the client. The counselor may attempt to formulate a hypothesis about self-esteem based on the history and family patterns of the client. One must use caution in projecting findings in children to older clients but there is some evidence to indicate that self-esteem is a fairly stable entity.

One may speculate that siblings are important in the development

of a child's self-esteem. Results of this study showed that children raised without siblings were prone to score lower on most measures of self-esteem than children with siblings.

Although not a specific intent of this research, the children in blended families were found to score below the sample means on all measures of self-esteem. If self-esteem is correlated with academic achievement, we may expect children in blended families to be prone to having more academic difficulties than the children from intact families.

Recommendations for Further Research

The writer recommends that further birth order research consider the concept of "psychological birth order position", rather than actual ordinal birth order position. The psychological birth order position refers to a personal perception of where one fits into the family constellation. For example the child's personal perception of self may be that of the "baby" of the family, of that of being "caught in the middle", or that of being the "oldest" of a group of siblings. Such a method may allow for more accuracy in determining birth order category.

In this study a five year age difference was used to divide siblings into separate subfamilies. This five year spacing was a rather safe and conservative method of dividing the family into subfamilies when in actual fact some subfamilies may exist with age spacing much less than five years. Of most importance, is the personal perception of the group or subfamily to which the subject belonged. Adler suggested that "dethronement" by a newborn sibling, after three or more years have elapsed would not have much impact on the style of life of the elder

child (Ansbacher, H. & R., 1956, p. 337). This suggested that personality, and perhaps even self-esteem, became quite stable in the first three years of life.

The term middle children used in this research could be further refined. For example, in a family of four children, the second and third children are both middle children, but they may have different characteristics. Determining the psychological birth order position would tend to clarify the birth order positions of such children.

Psychological birth order position can be determined through questioning of three types: description of siblings, information on social groupings of the siblings, and comparative ratings of the child and siblings on selected characteristics (Manaster & Corsini, 1982, p. 181). Siblings mentioned in the comparative ratings were usually in the individual's own subgroup (Eckstein et al., 1978, p. 11). It would have been cumbersome to personally interview each subject involved in a large study but a revision of the Family Data sheet may have allowed for such information to be obtained.

Readers wishing more information regarding the gathering of birth order data are referred to the literature on life-style assessment by Eckstein, Baruth, and Maher (1978) and also the book by Manaster and Corsini (1982).

Further research appears to be warranted regarding the self-esteem of children in blended families. A blended family is one in which parents remarry and children from both families come together to form a new family configuration. As a group, children from blended families scored consistently lower than each of the other groups on all measures of self-esteem. Children from blended families scored below the sample

means on each measure of self esteem.

Conclusions

Birth order effects on self-esteem showed results that are not significantly different from mean scores for the total sample. Some significance may be noted between mean scores of specific birth order groups but not between sample means and mean scores of specific birth order groups.

Trends as observed in this study suggested that Adlerian birth order characteristics may bias specific self-esteem measures. Although Adler did not specifically talk about the effects of family constellation on self-esteem, it did appear that there was at least some birth order influence on self-esteem scores, as measured by the Culture-Free Self-Esteem Inventory, of grade five children.

Sex of child was not an important factor in influencing self-esteem of grade five children.

No specific birth order indicators were found that would serve as identifiers of poor academic success.

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APPENDIX A

Family Constellation Data

Name in full_____. Circle one Boy Girl.

Date of Birth _____. Present Age_____.
Month Date Year

School_____. Home Room_____. Grade _____.

In the space below please list all of the children in your family, including yourself, in order of age from oldest to youngest. Please print. Use as much space as necessary.

Name (first name)	Age (years)	Relationship to you (brother, sister, step brother, step sister, self)
Oldest ↑ 1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
↓ Youngest 10.		

For Office Use Only. Do not write in the space.

1. Om 3. Fm 5.Mm 7.Im 9.Ym 11. Sm 13. Bm
2. Of 4. Ff 6.Mf 8.If 10.Yf 12. Sf 14. Bf

APPENDIX B

THE CANADIAN SELF-ESTEEM INVENTORY FOR CHILDREN [a]

by

James Battle, Ph.D.

Directions

Please mark your answer sheet for each of the 60 statements in the following way. If the statement describes how you usually feel, mark in "A" for YES on your answer sheet. If the statement does not describe how you usually feel, mark "B" for NO on your answer sheet. Please mark either A or B for each of the sixty statements. There are no "right" or "wrong" answers.

1.	I spend a lot of time daydreaming	A. Yes	B. No
2.	Boys and girls like to play with me	A. Yes	B. No
3.	I like to spend most of my time alone	A. Yes	B. No
4.	I am satisfied with my school work	A. Yes	B. No
5.	I have lots of fun with my mother	A. Yes	B. No
6.	My parents never get angry at me	A. Yes	B. No
7.	I wish I were younger	A. Yes	B. No
8.	I only have a few friends	A. Yes	B. No
9.	I usually quit when my school work is too hard	A. Yes	B. No
10.	I have lots of fun with my father	A. Yes	B. No
11.	I am happy, most of the time	A. Yes	B. No
12.	I am never shy	A. Yes	B. No
13.	I have very little trust in myself	A. Yes	B. No
14.	Most boys and girls play games better than I do	A. Yes	B. No
15.	I like being a boy/girl	A. Yes	B. No
16.	I am doing as well in school as I would like to	A. Yes	B. No
17.	I have lots of fun with both of my parents	A. Yes	B. No
18.	I usually fail when I try to do important things	A. Yes	B. No
19.	I have never taken anything that didn't belong to me	A. Yes	B. No
20.	I often feel ashamed of myself	A. Yes	B. No
21.	Boys and girls usually chose me to be the leader	A. Yes	B. No

[a] Original title of the Culture-Free Self-Esteem Inventory used in pilot studies.

22.	I usually can take care of myself	A. Yes	B. No
23.	I am a failure at school	A. Yes	B. No
24.	I find it hard to make up my mind and stick to it	A. Yes	B. No
25.	My parents make me feel that I am not good enough	A. Yes	B. No
26.	I never get angry	A. Yes	B. No
27.	I often feel that I am no good at all	A. Yes	B. No
28.	I have many friends about my own age	A. Yes	B. No
29.	Most boys and girls are smarter than I am	A. Yes	B. No
30.	Most boys and girls are better than I am	A. Yes	B. No
31.	My parents dislike me because I am not good enough	A. Yes	B. No
32.	I like everyone I know	A. Yes	B. No
33.	Children pick on me very often	A. Yes	B. No
34.	I like to play with children younger than me	A. Yes	B. No
35.	I like to be called on by my teacher to answer questions	A. Yes	B. No
36.	I would change many things about myself if I could	A. Yes	B. No
37.	There are many times when I would like to run away from home	A. Yes	B. No
38.	I am as happy as most boys and girls	A. Yes	B. No
39.	I can do things as well as other boys and girls	A. Yes	B. No
40.	I often feel like quitting school	A. Yes	B. No
41.	I worry a lot	A. Yes	B. No
42.	My parents understand how I feel	A. Yes	B. No
43.	When I have something to say, I usually say it	A. Yes	B. No
44.	I never worry about anything	A. Yes	B. No
45.	I am as nice looking as most boys and girls	A. Yes	B. No
46.	Other children are mean to me	A. Yes	B. No
47.	I know myself very well	A. Yes	B. No
48.	I am doing the best school work that I can	A. Yes	B. No
49.	People can depend on me to keep my promises	A. Yes	B. No

50.	My parents think I am a failure	A. Yes	B. No
51.	I always tell the truth	A. Yes	B. No
52.	I need more friends	A. Yes	B. No
53.	I always know what to say to people	A. Yes	B. No
54.	My teacher feels that I am not good enough	A. Yes	B. No
55.	My parents love me	A. Yes	B. No
56.	I never do anything wrong	A. Yes	B. No
57.	Most boys and girls are stronger than I am	A. Yes	B. No
58.	I am proud of my school work	A. Yes	B. No
59.	I often get upset at home	A. Yes	B. No
60.	I am never unhappy	A. Yes	B. No

(Reproduced by permission from J. Battle)

APPENDIX C

Culture-Free Self-Esteem Inventory -- Form A Subscale Items

General Self-Esteem Items.

1. I spend a lot of time daydreaming.
3. I like to spend most of my time alone.
7. I wish I were younger.
11. I am happy most of the time.
13. I have very little trust in myself.
15. I like being a boy / I like being a girl.
18. I usually fail when I try to do important things.
20. I often feel ashamed of myself.
22. I usually can take care of myself.
24. I find it hard to make up my mind and stick to it.
27. I often feel that I am no good at all.
30. Most boys and girls are better than I am.
33. Children pick on me very often.
36. I would change many things about myself if I could.
38. I am as happy as most boys and girls.
41. I worry a lot.
43. When I have something to say, I usually say it.
45. I am as nice looking as most boys and girls.
47. I know myself very well.
49. People can depend on me to keep my promises.

Social Self-Esteem Items

2. Boys and girls like to play with me.

8. I have only a few friends.

14. Most boys and girls play games better than I do.

21. Boys and girls usually choose me to be the leader.

28. I have many friends about my own age.

34. I like to play with children younger than I am.

39. I can do things as well as other boys and girls.

46. Other boys and girls are mean to me.

52. I need more friends.

57. Most boys and girls are stronger than I am.

Academic Self-Esteem Items

4. I am satisfied with my school work.

9. I usually quit when my school work is too hard.

16. I am doing as well in school as I would like to.

23. I am a failure at school.

29. Most boys and girls are smarter than I am.

35. I like to be called on by my teacher to answer questions.

40. I often feel like quitting school.

48. I am doing the best school work that I can.

54. My teacher feels that I am not good enough.

58. I am proud of my school work.

Parental Self-Esteem Items

5. I have lots of fun with my mother.

10. I have lots of fun with my father.

17. I have lots of fun with both my parents.

25. My parents make me feel that I am not good enough.

31. My parents dislike me because I am not good enough.

37. There are many times when I would like to run away from home.

42. My parents understand how I feel.

50. My parents think I am a failure.

55. My parents love me.

59. I often get upset at home.

Lie Items

6. My parents never get angry at me.

12. I am never shy.

19. I have never taken anything that did not belong to me.

26. I never get angry.

32. I like everyone I know.

44. I never worry about anything.

51. I always tell the truth.

53. I always know what to say to people.

56. I never do anything wrong.

60. I am never unhappy.

(Reproduced from Battle, 1981b, pp. 25-27)

APPENDIX D

FAMILY CONSTELLATION DATA

School: _____ Home Room: _____

Location Code: _____ Teacher: _____

Purpose

Data from this questionnaire is being collected as part of a thesis research project. It will be used to determine the number and sex of children in the family, age spacing of children, and birth order position in the family. This information will be part of an analysis to find out if sibling constellation is related to self-esteem.

Instructions

The teacher simply instructs the students to print a list of all the children in their family in chronological order from the oldest to the youngest. Each child is to include his/her own name and age on this list. The child is to note the word 'self' in the Relationship column, opposite his/her own name.

The basic information for the Relationship column is noted on the Family Constellation Data form. These basic relationships are: brother, sister, step-brother, step-sister, and self. Teachers may add comments which clarifies the sibling relationships, e.g. twin brother.

If you have any questions, or require additional information, please feel free to call me at home - phone 434-4510.

Thank you for your cooperation in this project.

Gerry Schultz

EDMONTON PUBLIC SCHOOLS

Student Assessment

May 5, 1982

MEMORANDUM

TO: Grade 5 Teachers Involved in the Affective Project

FROM: P. Plester, Director Student Assessment
Anne Mulgrew, Consultant
Lou Yaniw, Project Teacher

SUBJECT: Administration of Affective Instruments - Sample A

The following materials have been provided for your Grade 5 home room:

1. a class set of The Canadian Self Esteem Inventory for Children;
2. a class set of the Self-Concept of Ability and School Achievement Scale;
3. a class set of the IAR Scale (a locus of control measure);
4. three envelopes of preprinted answer sheets;
5. a class list for recording student final grades in Language Arts, Mathematics, Social Studies, and Science at the end of June; and
6. a class set of sheets entitled Family Constellation Data.

The three affective instruments are to be administered during the week of May 17 to May 21, 1982. The amount of time required to administer each instrument is approximately 25 to 30 minutes. A new answer sheet is to be used for each administration. As well, please have students complete the Family Constellation Data sheet sometime during this week.

Upon completion of testing, the three envelopes of answer sheets, all test booklets, and the Family Constellation Data sheets are to be returned to

Anne Mulgrew, Student Assessment

by May 28, 1982. The student class lists for recording final grades in the core subjects should be completed and returned to Anne Mulgrew by June 25, 1982.

We would like to take this opportunity to thank you for your willingness to participate in this project. The analysis of results will be done during the month of July and feedback will be provided to each of the participating schools in late September or early October.

If you have any questions regarding this project, please call Anne Mulgrew at 429-5621, ext. 658 or Lou Yaniw, ext. 679.

PMP/DAM/LBY/mlp

APPENDIX E

Table A

Subfamily Distribution of Middle-of-Three Children

Group	Family	First Subfamily	Later Subfamily	Total
Boys	19	1	1	21
Girls	12	4	0	16
Total	31	5	1	37

Table B

Descriptive Statistics, F-Values, and Probabilities for Sample Homogeneity of Middle-of-Three and Middle Born Subjects

Self-Esteem	Group	N	Mean	Std. Error	F	Prob (2 Tail)
General	MT	31	15.2903	3.388	1.28	0.511
	MB	26	14.1923	3.837		
Social	MT	31	7.0000	1.897	1.48	0.304
	MB	26	7.2692	2.308		
Academic	MT	31	7.2548	2.244	1.63	0.204
	MB	26	6.7692	2.861		
Parent	MT	31	7.8710	2.012	2.57	0.015*
	MB	26	6.8077	3.225		
Total	MT	31	37.5161	7.089	2.19	0.041*
	MB	26	35.0385	10.501		
Lie Scale	MT	31	7.2258	2.186	1.15	0.709
	MB	26	7.1538	2.344		

*Significance at the .05 level.

Table C

T-Test Variance Estimates for Middle-of-Three and Middle Born Subjects on Self-Esteem Measures

Self-Esteem	T-Value	DF	Prob (2-Tail)
General	1.15[a]	55	0.256
Social	-0.48[a]	55	0.631
Academic	0.87[a]	55	0.390
Parent	1.46[b]	40.40	0.152
Total	1.02[b]	42.58	0.312
Lie Scale	0.12[a]	55	0.905

[a] Pooled variance estimate.

[b] Separate variance estimate.

Table D

True Birth Order Distribution by Sex and Subfamily

Birth Order Category	Sex	Family	Subfamily First	Subfamily Later	Total By Sex	Total
Only Child	Boys	19	-	-	19	34
	Girls	15	-	-	15	
First Born	Boys	59	6	-	65	131
	Girls	52	14	-	66	
Middle Born	Boys	30	1	1	32	63
	Girls	25	5	1	31	
Youngest	Boys	80	-	5	85	159
	Girls	68	-	6	74	
Total	Boys	188	7	6	201	387
	Girls	160	19	7	186	

Table E

Mean Self-Esteem Scores -- By Sex and Composite Birth Order Category

(Blended and Single Sex Children Omitted When Computing Group Means)

Self-Esteem Scale	Sample	Group Mean	Birth Order Category				
			Only	First	Middle	Young	Blended
General SE	Total	14.77	14.58	14.51	14.75	15.09	13.56
	Boys	14.93	14.44	14.78	15.06	15.28	13.13
	Girls	14.59	14.73	14.25	14.42	14.87	13.81
Social SE	Total	6.50	6.40	6.32	7.19	6.46	6.12
	Boys	6.54	6.41	6.18	7.28	6.65	5.69
	Girls	6.45	6.40	6.47	7.10	6.24	6.37
Academic SE	Total	7.10	7.07	7.15	7.14	7.06	6.77
	Boys	6.93	6.74	6.95	6.88	7.03	5.81
	Girls	7.29	7.44	7.36	7.42	7.09	7.33
Parent SE	Total	7.81	7.73	7.86	7.46	7.93	7.44
	Boys	7.66	7.28	7.77	7.38	7.90	7.50
	Girls	7.96	8.23	7.95	7.55	7.98	7.41
Total SE	Total	36.17	35.77	35.84	36.54	36.54	33.88
	Boys	36.07	34.87	35.67	36.59	36.86	32.13
	Girls	36.29	36.79	36.01	36.48	36.18	34.93
Lie Scale	Total	6.76	6.74	6.65	7.14	6.73	6.63
	Boys	6.74	6.74	6.58	6.91	6.81	5.50
	Girls	6.78	6.73	6.73	7.39	6.64	7.30

Table F

Mean Self-Esteem Scores -- By Sex and True Birth Order Category

Self-Esteem Scale	Sample	Group Mean	Only	First Born	Middle	Youngest
General SE	Total	14.73	13.62	14.53	14.75	15.11
	Boys	14.94	13.79	14.71	15.06	15.33
	Girls	14.49	13.40	14.36	14.42	14.86
Social SE	Total	6.49	5.79	6.29	7.19	6.52
	Boys	6.56	6.16	6.22	7.28	6.65
	Girls	6.40	5.33	6.36	7.10	6.36
Academic SE	Total	7.14	6.79	7.31	7.14	7.06
	Boys	7.02	6.68	7.11	6.88	7.09
	Girls	7.26	6.93	7.52	7.42	7.03
Parent SE	Total	7.82	7.47	7.96	7.46	7.91
	Boys	7.76	7.21	7.94	7.38	7.89
	Girls	7.88	7.80	7.98	7.55	7.93
Total SE	Total	36.17	33.68	36.10	36.54	36.60
	Boys	36.29	33.84	35.97	36.59	36.96
	Girls	36.03	33.47	36.23	36.48	36.19
Lie Scale	Total	6.80	7.15	6.72	7.14	6.67
	Boys	6.86	7.53	6.60	6.91	6.88
	Girls	6.75	6.67	6.83	7.39	6.42

Table G

Descriptive Statistics for the Total Sample on Self-Esteem Measures

SE Scale	Sample	N	Mean	SD
General	Total	542	14.642	3.668
	Boys	275	14.793	3.526
	Girls	267	14.449	3.807
Social	Total	542	6.463	2.402
	Boys	275	6.498	2.361
	Girls	267	6.427	2.447
Academic	Total	542	7.055	2.354
	Boys	275	6.844	2.283
	Girls	267	7.273	2.410
Parent	Total	542	7.762	2.167
	Boys	275	7.644	2.247
	Girls	267	7.884	2.079
Total SE	Total	542	35.904	8.515
	Boys	275	35.778	8.278
	Girls	267	36.034	8.767
Lie Scale	Total	542	6.760	2.178
	Boys	275	6.684	2.184
	Girls	276	6.839	2.173

Table H

Two-Way Anova -- Lie Score by Sex and Composite Birth Order

Source of Variation	SS	DF	MS	F	Prob.
Main Effects	11.373	4	2.843	0.585	0.674
Sex	0.177	1	0.177	0.036	0.849
Birth Order	11.192	3	3.731	0.768	0.512
Two-Way Interactions	5.750	3	1.917	0.394	0.757
Explained	17.124	7	2.446	0.503	0.832
Residual	2356.581	485	4.859		
Total	2373.704	492	4.825		

Table I

Two-Way Anova -- Lie Score by Sex and True Birth Order

Source of Variation	SS	DF	MS	F	Prob.
Main Effects	16.319	4	4.080	0.834	0.504
Sex	1.106	1	1.106	0.226	0.635
Birth Order	15.183	3	5.061	1.035	0.377
Two-Way Interactions	19.009	3	6.336	1.295	0.276
Explained	35.328	7	5.047	1.032	0.408
Residual	1853.708	379	4.891		
Total	1889.036	386	4.894		